Documentation Sheet

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Title	*Effect of Mutual Coupling on the Performance of Adaptive Arrays*
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Abstract

The performance of adaptive array is controlled significantly by the correlations between the antenna array elements. For smaller inter-element spacing, the mutual coupling effect is known to degrade the suppression capabilities of adaptive array. In this document, the effect of mutual coupling on the steady state performance of LMS array of half-wavelength dipoles is analyzed. The effect of variation of different parameters, viz. the number of antenna elements, the inter-element spacing, the ratio of desired signal power to thermal noise power on the output SINR (with and without mutual coupling) is studied. The steady state performance of LMS and applebaum array is compared for the no mutual coupling and with mutual coupling cases. Moreover the role of eigenvalues of signal covariance matrix on the transient response of adaptive array is studied, when desired and interfering signals are incident on the antenna array from different directions.